



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/670,096	09/24/2003	Hyo-Soo Lee	4611-029	6274
22440 7590 05/18/2007 GOTTLIEB RACKMAN & REISMAN PC 270 MADISON AVENUE 8TH FLOOR NEW YORK, NY 100160601			EXAMINER SCHAFFER, JONATHAN C	
			ART UNIT 2624	PAPER NUMBER
			MAIL DATE 05/18/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/670,096

Applicant(s)

LEE ET AL.

Examiner

Jonathan C. Schaffer

Art Unit

2624

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-5 is/are allowed.
- 6) ☒ Claim(s) 6-10 is/are rejected.
- 7) ☒ Claim(s) 7 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>09/24/2003</u> . | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claim 6 and 10 are rejected under 35 U.S.C. 102(b) as being anticipated by Kaminsky et al (International Publication Number WO 00/11454).

6. A method for analyzing a surface condition of a printed circuit board (PCB) using RGB colors, comprising the steps of:

(A) setting relative RGB values for PCBs, and storing the set relative RGB values;

Kaminsky discloses a method for analyzing the surface condition specifically detecting the presence of oxide on a conductor on a printed circuit board (pg. 2, l. 11-12), Kaminsky achieves this by setting and storing relative RGB values for the surface of PCBs (pg. 2, l. 13-33 & pg. 3, l. 1-11)

(B) picking up an image of a target PCB, to be measured, fed by a feeding unit;

Kaminsky discloses generating an image of the PCB (pg. 3, l. 20). Kaminsky discloses generating an image of a PCB, therefore the PCB had to be fed to the image pick-up device. A feeding means which feeds the PCB is an inherent aspect of Kaminsky's invention, whether that feeding means is a human operator delivering by hand the PCB or an automated mechanism which does the "feeding", a feeding means is required in order for it to perform as disclosed.

Art Unit: 2624

(C) performing an RGB-mapping process for pixel data extracted from the picked-up image of the target PCB; and

(pg. 2, l. 13-33 & pg. 3, l. 1-11)

(D) producing accumulative distribution data of relative RGB values for the pixel data of the target PCB, thereby quantitatively determining an oxidation degree of the target PCB.

Kaminsky discloses determining the presence of an oxide and as part of that determination the "degree" is determined as Kaminsky establishes a "range" of RGB values from the distribution data, that if the RGB values of an object under analysis are within a particular range or have a high enough degree of oxidation then it is determined that an oxide is present (pg. 8, l. 47-49 & pg. 9, l. 1-7).

10. The method according to claim 6, wherein the step (D) comprises the steps of:

running a mapping program by the signal analyzing unit, thereby extracting RGB signals from the pixel data of the target PCB;

(pg. 2, l. 13-33 & pg. 3, l. 1-11 & pg. 4)

running the mapping program by the signal analyzing unit, thereby determining a relative RGB value from the extracted RGB signals;

(pg. 2, l. 13-33 & pg. 3, l. 1-11 & pg. 4)

Art Unit: 2624

comparing the determined relative RGB value with a corresponding relative RGB value searched for from a database stored with relative RGB values, and converting the determined relative RGB value into an electrical signal; and

(pg. 2, l. 13-33 & pg. 3, l. 1-11 & pg. 4)

running the mapping program by the signal analyzing unit, thereby producing cumulative distribution data of relative RGB values of pixel data for the target PCB, and quantitatively determining an oxidation degree of the target PCB exhibited with the lapse of time, based on the cumulative distribution data

(pg. 2, l. 13-33 & pg. 3, l. 1-11 & pg. 4 & pg 8, l. 47-49 & pg. 9, l. 1-7)

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 8-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kaminsky et al (International Publication Number WO 00/11454).

8. The method according to claim 6, wherein the step (B) comprises the steps of:

feeding the target PCB to an image pick-up position where a pick-up unit is disposed, in accordance with a feeding operation of the feeding unit;

Kaminsky discloses generating an image of a PCB, therefore the PCB had to be fed to the image pick-up device. A feeding means which feeds the PCB is an inherent aspect of Kaminsky's invention, whether that feeding means is a human operator delivering by hand the PCB or an automated mechanism which does the "feeding", a feeding means is required in order for it to perform as disclosed.

determining whether or not a color temperature and brightness of light to be irradiated onto the target PCB upon picking up an image of the target PCB are set to predetermined values, respectively;

if the color temperature and brightness of the light are not set to the predetermined values, respectively, sending a control signal, adapted to set the color temperature and brightness of the light to the predetermined values, from a signal analyzing unit to a light source setting unit;

The above two limitations merely claim optimizing the system. The Examiner takes official notice that optimizing the system of Kaminsky in this way would have been obvious to one of ordinary skill in the art to which the Applicant's claimed invention pertains, in order to ensure accurate operation of the disclosed invention, if the color temperature and brightness were not set to the necessary values the system would operate less than optimally, and thus a means to correct less than optimal conditions would have been exceedingly obvious.

sending an image pick-up control signal, adapted to pick up an image of the PCB, from the signal analyzing unit to the pick-up unit; and

Kaminsky discloses generating an image of the PCB (pg. 3, l. 20).

Art Unit: 2624

picking up an image of a metal surface of the PCB in accordance with the image pick-up control signal, dividing the picked-up image into pixels of a corresponding bitmap, and producing an image data file of the bitmap.

Kaminsky discloses dividing the picked-up image into pixels of a corresponding bitmap as is evidenced by the disclosure of pixel analysis (pg. 2, l. 11-33).

9. The method according to claim 6, wherein the step (C) comprises the steps of:

receiving the picked-up image data of the PCB from the pick-up unit via a communication interface by the signal analyzing unit;

Kaminsky discloses generating an image of the PCB (pg. 3, l. 20).

running a mapping program by the signal analyzing unit, thereby extracting pixel data from the picked-up image data of the PCB for a selected pixel;

(pg. 2, l. 13-33 & pg. 3, l. 1-11)

determining whether or not reliable RGB signals are detected from the pixel data extracted by the signal analyzing unit;

if reliable RGB signals are not detected from the extracted pixel data, repeating the pixel data extraction step and the determination step until reliable RGB signals are detected;

determining whether or not optimum RGB ranges for mapping of the pixel data have been set by the signal analyzing unit;

if the optimum RGB ranges for mapping of the pixel data have not been set, sending a control signal, adapted to set the optimum RGB ranges for the mapping of the pixel data, from the signal analyzing unit to the RGB range setting unit, thereby setting the optimum RGB ranges; and

The above four limitations merely claim optimizing the system. The Examiner takes official notice that optimizing the system of Kaminsky in this way would have been obvious to one of ordinary skill in the art to which the Applicant's claimed invention pertains, in order to ensure accurate operation of the disclosed invention, if the RGB signals of Kaminsky's invention were not *reliable* and *non-reliable* RGB signals were not corrected the invention would not function as disclosed and thus a means to correct non-reliable RGB signals would have been exceedingly obvious.

running the mapping program by the signal analyzing unit, thereby RGB-mapping the pixel data of the PCB.

(pg. 2, l. 13-33 & pg. 3, l. 1-11)

Allowable Subject Matter

5. Claims 1-5 allowed.
6. Claim 7 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jonathan C. Schaffer whose telephone number is (571)272-0603. The examiner can normally be reached on 7:30am - 4:00pm.

Art Unit: 2624

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph Mancuso can be reached on (571)272-7695. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JS



JOSEPH MANCUSO
SUPERVISORY PATENT EXAMINER